

## Hat trick for seasonal tropical storm forecast

16 December 2009



There were just nine tropical storms in the 2009 North Atlantic hurricane season, making it one of the quietest in the last decade. We accurately predicted the below-average activity, maintaining the excellent record of our seasonal North Atlantic tropical storm forecast since it was introduced three years ago.

The Met Office seasonal forecast, issued in June, predicted a range of three to nine tropical storms — the average number of North Atlantic tropical storms in the July to November period is about 12.

It also predicted an Accumulated Cyclone Energy (ACE) index of 40 to 80 for the July to November period. ACE is the combined strength and duration of storms over the same period. During this time there were nine tropical storms with a combined ACE index of just 52, the lowest since 1997 — the average ACE is 131.

Joanne Camp, climate scientist at the Met Office, said: “The performance of the forecast over the last two years has been particularly good, because our forecast predicted the above average season in 2008 and then accurately picked up the transition to a relatively quiet year in 2009.”

The Met Office seasonal tropical storm forecast is created using a dynamical numerical model of the climate system, known as GloSea. This simulates the important interactions between the ocean and atmosphere, such as the El Niño Southern Oscillation (ENSO), which can influence tropical storm development. The forecasts were developed following research collaborations with the [European Centre for Medium-Range Weather Forecasts](http://www.ecmwf.int) (ECMWF).

Understanding and accurately forecasting ENSO, which is marked by sustained warming or cooling of sea-surface temperatures in the tropical Pacific Ocean, is crucial to predicting tropical storm activity. This irregular fluctuation can affect the number of tropical storms which develop along with their strength.

In 2009 a developing El Niño was observed, which had been well predicted by the Met Office seasonal forecasting system, and this is likely to have been crucial in the success of the tropical storm forecast.

**Verification and analysis report for the 2009 season** (PDF, 3.05 MB)

**How we forecast tropical storms**

### Contact information

Met Office Press Office: **+44 (0)1392 886655**

E-mail: [Press Office](mailto:press@metoffice.gov.uk)

Met Office Customer Centre: **0870 900 0100**

If you're outside the UK: **+44 1392 885680**

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